PHIL 103: Philosophical Aspects of Cognitive Science

RICE UNIVERSITY, SPRING 2020 – COURSE SYLLABUS

Time & Location:	Tu & Th, 10:50am-12:05pm, HRG 129
Instructor:	Alex Morgan
Contact:	alex.morgan@rice.edu
Office Hours:	Brochstein, Thu, 12:15-1:15pm

COURSE DESCRIPTION & OBJECTIVES

Cognitive science is the interdisciplinary science of the mind. It emerged during the 'cognitive revolution' in the 1950s, which was instigated in large part by the development of information and computer technology. From its inception, cognitive science has drawn inspiration from the idea that the mind or brain might itself be a kind of biological computer. Although thinkers throughout history have used metaphors inspired by the technology of their time to explain the mind, many cognitive scientists have held that the computer model of mind is not merely metaphor but literally *true*.

This idea raises deep and difficult conceptual questions: What is the mind? How does it relate to the brain? Is the mind really a computer? What does that even mean? And if minds are computational, couldn't we engineer artificial minds? Addressing such questions requires more than measuring reaction times or putting people in an fMRI machine; it requires careful reflection and analysis of the kind practiced by philosophers. For this reason, philosophy has always been one of the central sub-disciplines of cognitive science, alongside psychology, artificial intelligence and linguistics.

Conversely, though, the experimental sciences of cognition also promise to finally answer some of the most difficult questions that philosophers have been grappling with for centuries, such as questions about consciousness, the self, or free will. Addressing these questions might have profound social and ethical implications. Unlocking the mysteries of the mind might reshape our conception of who we are and how we relate to other intelligent life in the universe. With transformative artificial intelligence on the horizon, it is perhaps already doing so in ways we are slowly beginning to appreciate.

The objectives of this course are to (1) introduce students to some of the central results and theoretical perspectives in cognitive science; (2) develop philosophical skills of independent critical reasoning through collegial discussion and analytical writing; (3) develop skills for doing research in further cognitive science courses; (4) reflect on our place in the universe and our relations to other intelligent beings in light of scientific evidence about how the mind works; and (5) provide a framework for thinking about the most important things you can do with your lives.

Expectations & Responsibilities

Communication with the Instructor

Please call me 'Alex' or whatever other name you feel comfortable with. If you ever have any questions about the structure or content of the course, feel free to either email me at the above address (make sure to put '103' in the subject line to ensure a timely response), or come speak to me in person. I will hold regular office hours on Tuesdays 12.15-1.15pm in the Brochstein building, but if that's inconvenient I'm happy to meet some other time or to chat over Skype.

Participation & Attendance

The focus of this course will be on learning philosophical skills rather than rote-learning a fixed body of knowledge. As with any other skill, learning how to do philosophy requires a lot of practice. For this reason, much of the class time will be devoted to group discussions of the assigned material (reflected in the fact that 30% of your grade will be based on participation, as described below). To benefit from class discussions – and to get a good grade! – you must do your best to read and understand the assigned materials, and come to class ready to share your understanding with others. Discussion benefits from regular attendance, which is required and will be tracked using the exit-ticket system described below.

Philosophy often involves questioning familiar assumptions, and this course will engage with issues that touch the core of our personal and social identities – such as the existence of the soul, the function of religion, or the realities of factory farming. Some of you might find frank discussion of these issues unsettling. If you're not ready to discuss contentious issues respectfully and dispassionately, this class isn't for you. If you're curious about big questions and enjoy problem solving, you'll probably do well.

Discrimination & Support Services

Philosophical discussion can only thrive in an environment of mutual respect and tolerance for unusual or contentious views. To create such an environment, discrimination based on race, gender, class and other superficial differences will not be tolerated. The only discrimination in this course, I hope, will be discrimination against *unreasonableness*. If at any time while at Rice you experience harassment or inappropriate discrimination, you can file a complaint at Access, Equity and Equal Opportunity office (https://eeopaa.rice.edu/). If you have a disability that might affect your academic performance, please let me know and make sure the relevant documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu), so I can ensure that you have the accommodations you need.

Philosophy is associated in the popular imagination with old bearded white men, but philosophers come in a variety of shapes and sizes. See the *Looks Philosophical* blog (https://looksphilosophical.tumblr.com/).

Academic Integrity

Academic dishonesty is a serious offense. Many scientific advances have been made by revealing academic misconduct, as in the case of Cyril Burt's discredited work on the heritability of IQ. That's in part why it's important to maintain strong norms of academic integrity, even in a first-year college course like this one. Another reason is that academic dishonesty is simply unfair to your fellow students. For these reasons, participants in this course will be held strictly to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook (http://honor.rice.edu/honor-system-handbook/).

The most common form of academic dishonesty in this course is plagiarism. Often plagiarism is unintentional, so fortunately it's easy to avoid. If you take any text from some other source, you must make it clear the text is being quoted and where the text comes from. You must also cite any sources from which you obtain ideas, scientific evidence, or other material. If you have any questions about what does or does not constitute plagiarism, just ask me or the teaching assistant.

Course Materials

The only material you'll need to purchase for this course is the 2016 book *Homo Deus* by Yuval Harari, which should be available at the Rice bookstore. All the other course materials will be provided via the Pages section of the Canvas site. Please check that you have access to the site and that it's connected to an email account that you check regularly.

(I hope that purchasing *Homo Deus* won't impose a barrier to your participation in the course. You might be able find a cheap copy online or at Half Price Books in Rice Village. If you have trouble finding an affordable copy, let me know and I'll try to rustle one up. An excellent option is the audiobook, which would allow you to work through it 1.5-2× as fast. Maybe there's a copy at Fondren or a public library?)

For further reading about the philosophical issues we'll discuss in this course, Wikipedia is a reasonable place to start, but it certainly shouldn't be treated as authoritative. More reliable discussions of philosophical ideas can be found at the Internet Encyclopedia of Philosophy (https://www.iep.utm.edu/), and in-depth articles about larger debates by leading experts can be found at the Stanford Encyclopedia of Philosophy (https://plato.stanford.edu/). To find your way through the scientific literature in psychology, neuroscience, and other areas of cognitive science, an excellent foundation is provided by this advice on how to know whether a paper is legit: https://www.callingbullshit.org/tools/tools_legit.html.

Assignments & Grading

Discussion Questions (12 × 2% = 24%)

Each week, I'll post a set of discussion questions on the Pages section of the Canvas site about one or more of the materials assigned for that week. Course participants are required to submit a total of twelve sets of answers to these questions, which they should also bring along to class in paper or electronic form for class discussions. Answers to discussion questions will be evaluated *Good* or *Needs Improvement*. *Good* answers will earn 2 percentage points. Answers that *Need Improvement* will earn zero points, but can be resubmitted after taking into account the class discussion that week, and if regraded to *Good* they will earn 2%. If, after class discussion, you're still unsure about how you can improve your answers, make a time to discuss them with me. Participants are allowed to resubmit up to *six* of their discussion answers, so there's little excuse for getting less than a perfect score for this section!

Group Participation (30%)

Much of the class time will be devoted to discussion and group-based activities, often focussing on your answers to the discussion questions. Groups will be announced on Canvas by the second week of class, and Canvas homepages will be created for each group. Group activities will often involve written work, which should be typed up and electronically submitted to the group homepage by the end of class. Each time your group meets you should assign someone to be the scribe. This person will be responsible for typing up your group responses and submitting them to the homepage. Be sure to rotate scribe duties and indicate who the scribe was on any submitted work. Halfway through the semester, groups will be reassigned. At this point, and at the end of the semester, all of the group participants will grade each other. Grades will be based on factors like your level of preparation for discussing the material, and how well you contribute to an atmosphere of respectful, rational discussion. Grades will be averaged and converted to a score out of 30.

Exit Tickets (10%)

Five minutes before the end of each class (after the first week), participants will be asked to write down one or two questions about the material just discussed in class that they were especially puzzled or curious about. Answers will be collected, and used to shape subsequent discussion. Your grade out of 10% will be based on the total number of tickets you provide divided by the total number of relevant classes (24, unless there are unforeseen changes). Documented excuses for missing class will factor into this calculation.

Research Bibliography (18%)

Course participants are required to put together a 6-8 page annotated bibliography of material that would be relevant for addressing one of the central questions of this course, as described in the schedule below. The bibliography entries should span at least three of the main sub-disciplines of

cognitive science (psychology, neuroscience, philosophy, linguistics, computer science, etc.), exhibiting a robustly interdisciplinary approach to your chosen question. The entries should also be accompanied by a brief description explaining why they would be especially useful for addressing your chosen question. The bibliography will be due roughly halfway through the semester. More details about this assignment will be provided in a separate handout.

Analytical Paper (18%)

Participants are required to write a 6-8 page paper that develops a philosophical argument for a specific answer to one of the central questions of the course. The paper will be due at the end of the semester. More details about this assignment will be provided in a separate handout.

Bonus Points (no more than 8%)

Participants may gain up to 2 percentage points for doing one of the following, at the instructor's discretion. You may do this up to four times, for a total of up to 8 extra percentage points:

- Identify a 'deepity' in one of the assigned readings. Quote the passage in which the deepity is expressed (providing relevant citation information), and explain why you think it's a deepity. Deepities are described in the short piece by Dennett in the Canvas page for week 1.
- Identify a philosophical question arising the popular media that relates to one of the topics covered in this course. Quote the relevant passage (providing relevant citation information), and describe the philosophical question that you think it is addressing.
- If at any point in class I endorse a claim that you think is false, provide an objection to it. The objection needn't be decisive, but it should at least be compelling.

GRADING

Your total % grade for the course will be assigned a letter grade according to the following scale:

A+	A	A−	B+	B	B−	C+	C	C−	D+	D	D−	F
≥95	≥93	≥90	≥87	≥83	≥80	≥77	≥73	≥70	≥67	≥63	≥60	<60

SCHEDULE

What follows is a preliminary sketch of the topics and materials we'll be covering in the course, and when we'll be covering them. The overall structure probably won't change much, but the specific readings likely will. Moreover, additional readings and audiovisual materials will be made available via Pages section on the Canvas site. For up-to-date details about the materials assigned for a given week, see the Page for that week. The Page for the coming week will be published on the Thursday before that week, if not before.

A note about reading *Homo Deus*: the book spins a grand overarching narrative that doesn't always match up with the structure of the course. The book also contains a lot of material (especially the specific historical details) that is interesting but not directly relevant to the course. The book is provided mainly as background reading to provide a kind of scaffolding for the various other readings we'll be discussing. I will identify specific passages from *Homo Deus* to focus on in the Page for a given week, but otherwise you should feel free to skim through the book to familiarize yourself with the main ideas, in roughly the order described by the grey boxes below.

WEEK 1 (1/13): *What is philosophy? What is cognitive science? How do they relate?*

- Rowlands, M. (2012) *A right to believe?*

Homo Deus, Ch.1:
'The New Human Agenda'

WEEK 2 (1/20): *Is the mind a computer?*

- Seriès, P. & Sprevak, M. (2015), From intelligent machines to the human brain.

WEEK 3 (1/27): *Could a machine think?*

- Dennett, D. (1985), Can machines think?

Homo Deus, Ch.2:
'The Anthropocene'

WEEK 4 (2/3): *What are the origins of mind?*

- Trestman, M. (2013), The cambrian explosion and the origins of embodied cognition.

WEEK 5 (2/10): *Do other beings have minds? How do we know? (*)*

- Keeley, B. (2004), Anthropomorphism, primatomorphism,mammalomorphism.

WEEK 6 (2/17): *Is there anything unique about human minds?*

- Gopnik, A. (1998), Explanation as orgasm.

WEEK 7 (2/24): *How does the mind relate to the brain?*

- Churchland, P. (1984), Matter and consciousness (selections).

Homo Deus, Ch.3:
'The Human Spark'

WEEK 8 (3/2): *Could we ever explain conscious experience?*

- Carmel, D. & Sprevak, M. (2015), What is consciousness?

SCHEDULE (CONT.)

WEEK 9 (3/9): *What is the moral value of consciousness? (*)*

- Singer, P. (1975), All animals are equal.

Homo Deus, Ch.3: *'The Human Spark'*

WEEK 10 (3/16): *SPRING BREAK: NO CLASS*

WEEK 11 (3/23): *Do souls exist?*

- Piccinini, G. & Bahar, S. (2015), No mental life after brain death.

WEEK 12 (3/30): *What is the function of religion?*

- McCauley, R. & Cohen, E. (2010), Cognitive science and the naturalness of religion.

Homo Deus, Ch.5: *'The Odd Couple'*

WEEK 13 (4/6): *Does free will exist? What about the self?*

- Sider, T. (2005), Free will and determinism.

Homo Deus, Ch.8: *'The Time Bomb in the Lab'*

WEEK 14 (4/13): *Could reality be artificial?*

- Chalmers, D. (2003), The matrix as metaphysics.

Homo Deus, Chs.4 & 9: *'The Storytellers' / 'The Great Decoupling'*

WEEK 15 (4/20): *Could minds ever be 'uploaded' or 'upgraded'?*

- Piccinini, G. (forthcoming), The myth of mind uploading.

Homo Deus, Chs.11–12: *'The Ocean of Consciousness' / 'The Data Religion'*

(*) No class on either 2/13 or 3/12.